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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,843	07/23/2003	Volker Fraedrich	09130.0003	9278

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EXAMINER

NATALINI, JEFF WILLIAM

ART UNIT PAPER NUMBER

2858

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/626,843	Applicant(s) FRAEDRICH, VOLKER	
	Examiner Jeff Natalini	Art Unit 2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 15-29 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-6 is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-14 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

1. Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification does not describe a "key" only a "softkey" is described in the specification, and therefore changing "softkey" to "key" introduces new matter.

Applicant has not explained why it was changed or the differences in the claim language between 'key' and 'softkey'.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 7, 9-14, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lulham (5714885) in view of Topp et al. (5574376).

In regard to claims 1, 3, 7, and 30, Lulham discloses a method/apparatus of locating cable faults (abstract) comprising:

means for coupling an audio frequency generator to a cable to provide a magnetic field at an audio frequency (abstract lines 5-17);

Art Unit: 2858

means for generating test values corresponding to the magnetic field along the cable route (col 7 line 46-57);

means for entering the test values at a plurality of test points on the cable route (col 7 line 46-53);

means for determining a degree of inhomogeneity along the cable route from the test values determined (col 1 line 60 - col 2 line 6) and displaying the degree of inhomogeneity (col 2 line 41-64 and col 3 line 33-62; also see figures 12-17 and descriptions).

Lulham lacks specifically wherein the test values are generated corresponding to receiving at least two orthogonal components of the magnetic field at the receiver and storing all values recorded in memory (claim 1),

wherein the detecting of the magnetic field is done with a first and second antenna coil, being positioned orthogonal to each other (claim 3) and

wherein entering the test values at test points along the cable includes entering an input to a softkey/key at various points on the cable route to signify a test point, and storing the test values in memory upon activation of the softkey/key (claim 7).

Topp et al. discloses wherein the two orthogonal values are received in order to properly produce values in order to test a conductor are determined with antenna coils orthogonal to each other (col 1 line 55-64, see also col 4 line 52-64), and recording all the values in memory (col 3 line 62-64) and wherein entering the test values at test points along the cable includes entering an input to a softkey/key at various points on

Art Unit: 2858

the cable route to signify a test point, and storing the test values in memory upon activation of the softkey (col 3 line 53-61).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Lulham to incorporate determining two orthogonal values of the magnetic field with antenna coils orthogonal to each other and storing the readings, when the test values are input at various points along the cable and activating the memory upon activating the softkey/key, as taught by Topp et al. in order to be able to inspect faults through many non-conducting coatings of the conductor (col 1 line 21-24).

In regard to claims 9 and 13, Lulham discloses displaying the degree of inhomogeneity with a line trace indicated on a display of the receiver (col 2 line 41-64 and figures 12-18).

In regard to claims 10-12, Lulham as modified lacks specifically wherein the line trace of the degree of inhomogeneity discloses different coloration (claim 10), thickness (claim 11), and different patterns (claim 12).

MPEP 2144.04 IV A and B *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) states that changes in size/shape do not have patentable distinction. MPEP 2144.06, states substituting equivalents known for the same purpose (different colors) does not provide patentable distinction.

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Lulham as modified to include in the display of inhomogeneity different discoloration, thickness, and/or patterns (shape) to provide the user with quick knowledge of where the inhomogeneity is greatest in the cable.

In regard to claim 14, Lulham discloses overlaying a geo-information cable route (unfaulted cable) display to compare with the cable route (col 4 line 20-34).

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lulham (5714885) and Topp et al. (5574376) as applied to claim 1 above, and further in view of Davis, Jr. (5539323).

Lulham as modified by Topp et al. lack specifically wherein a first pole of the audio frequency generator is connected to a central conductor of the cable, where the central connector is connected to an earth ground, and where a second pole of the generator is connected to an earth ground.

Davis, Jr. teaches wherein a cable has a central connector connected to an earth ground (col 2 line 62-65).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to have the audio frequency generator connected to one or two poles to earth ground in order to be able to properly generate signals (generated signals all have a value based on a differential from ground), and its obvious from the teaching of Davis, Jr. to include an earth ground connected to an inner connector of a cable to provide proper shielding (col 2 line 50-65).

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lulham (5714885) and Topp et al. (5574376) as applied to claim 1 above, and further in view of Bose et al. (US Pub 20030010494).

Art Unit: 2858

Lulham as modified by Topp et al. discloses all that is disclosed above.

Lulham as modified lacks wherein a variation of the components of the orthogonal values are determined, and the variation is scaled to form the degree of inhomogeneity.

Bose et al. discloses wherein a variation of the components of the orthogonal values are determined, and the variation is scaled to form the degree of inhomogeneity (paragraph 9, see figures 9-14).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Lulham as modified to determine the inhomogeneity of the values determined by determining a variation, and forming the degree of inhomogeneity from the variation as taught by Bose et al. in order to obtain a more complete characterization of the values (paragraph 8).

Allowable Subject Matter

6. Claims 4-6 are allowed.

In regard to claim 4, the prior art does not teach or render obvious wherein generating test values corresponding to the orthogonal components of the magnetic field along the cable includes filtering the amplified signals and digitizing the filtered signals to produce the test values and the combination as claimed.

Claims 5-6, depend from claim 4 and are also allowable.

Response to Arguments

7. Applicant's arguments with respect to claim 30 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 1/16/07 have been fully considered but they are not persuasive. Applicant is arguing that the 35 U.S.C. 103(a) does not provide a prima facie case of obviousness because there is no motivation to combine the two references. In the arguments applicant has stated that Topp et al. and Lulham are nonanalogous art to each other, but since both inventions are drawn to methods/apparatus for locating or detecting faults on a conductor, one of ordinary skill in the art would recognize these inventions as being analogous and combinable.

Also the applicant has argued that Topp et al. teaches away from solutions that transmit a signal through the conductor as in Lulham, and essentially states that because they are not the exact same invention it would be unobvious to combine them. Lulham and Topp et al. each determine defects in conductors. Therefore, it would be reasonable for Lulham to understand a feature used in Topp et al. and implement that feature in a combination of the two inventions (every feature from both inventions are not combined to form an invention containing each feature from the two inventions). The feature in independent claims 1 and 30 that is not taught by Lulham is receiving at least two orthogonal components of the magnetic field at the receiver and storing all values recorded in memory, which Topp et al. discloses in col 1 line 55-64, see also col 4 line 52-64, and col 3 line 62-64. By adding these features taught by Topp et al., the combination of Lulham in view of Topp et al. would be able to inspect faults through

Art Unit: 2858

many non-conducting coatings of the conductor (col 1 line 21-24) and it is stated this feature would help properly test a conductor (col 1 lines 55-64 and col 4 line 52-64). The examiner believes a prima facie case of obviousness has been established and therefore claims 1-3, 7-14, and 30 remain rejected.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action (claim 30 is amended and a new form of rejection is presented for claim 30). Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

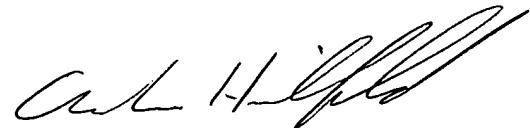
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Natalini whose telephone number is 571-272-2266. The examiner can normally be reached on M-F 8-5.

Art Unit: 2858

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on 571-272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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